Assistant System Engineer

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TR/ASE/17

Test Booklet Series

B

02.08.2017

TEST BOOKLET
GENERAL ABILITY TEST

(Signature of the Candidate)

(Invigilator's Signature)

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Time Allowed : 2 hours (Two hours) **Maximum Marks : 100**

INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE SCREENING TEST, YOU SHOULD CHECK THAT THIS TEST BOOKLET DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. **ENCODE CLEARLY THE TEST BOOKLET SERIES IN THE APPROPRIATE PLACE IN THE ANSWER SHEET BY BLACK BALL POINT PEN ONLY.**
3. This Test Booklet contains 100 items (questions). Each question carrying 1 (one) mark only, has four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the most appropriate. In any case, choose ONLY ONE response for each item.
4. You have to mark all your responses by **Black Ball Point Pen only** on the separate Answer Sheet provided. See directions in the Answer Sheet.
5. All items carry equal marks.
6. Before you proceed to mark in the Answer Sheet the responses to various items in the Test Booklet, you have to fill in some particulars in the Answer Sheet.
7. After you have completed filling in responses on the Answer Sheet and the Screening Test is completed, you should handover the Answer Sheet to the Invigilator only. You are permitted to take the Test Booklet with you.
8. Sheets for rough work are appended on the Test Booklet at the end.
9. **Penalty for wrong answers :**
   (a) There will be four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, **one-third** of the marks assigned to that question will be deducted as penalty.
   (b) If a candidate gives more than one answer, it will be treated as a **Wrong Answer** even if one of the given answers happens to be correct and there will be same penalty as above to that question.
   (c) If a question is left blank, i.e. no answer is given by the candidate, there will be **no penalty** for that question.

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Four options are given against each of the following questions. Select the best/correct option from among the four options and encode in the answer sheet by using **Black Ball Point Pen** only as per example given below :

Example : The capital of India is

(A) Delhi ● (B) New Delhi

(C) Indraprastha (D) None of these

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PART – I

1. Which book of Rabindranath Tagore is related to Bhuveneswari temple ?
   (A) Bisarjan
   (B) Mukut
   (C) Rajmala
   (D) None of these

2. Which airport was set up during the reign of Bir Bikram Kishore Manikya ?
   (A) Singerbill airport
   (B) Kailasahar airport
   (C) Kamalpur airport
   (D) None of these

3. Who introduced civil & criminal codes in Tripura ?
   (A) Birendra Manikya
   (B) Birchandra Manikya
   (C) Radhakishore Manikya
   (D) None of these

4. Which of the following statements regarding laterite soils of India are correct ?
   1. The laterite soil develops in areas with high temperature and heavy rainfall.
   2. Due to high tropical rains iron oxide and silica get leached out.
   3. Red laterite soils are more suitable for crops like sugarcane, wheat and cashew nuts.
   4. Humus content of the soil is low because most of the microorganisms get destroyed due to high temperature.

   Codes :
   (A) 1, 2 and 3
   (B) 2, 3 and 4
   (C) 1 and 4
   (D) 2 and 3

5. Which of the following is incorrect about foot loose industries ?

(A) These industries are not located in any specific raw materials, weight losing or otherwise.

(B) These industries produce in small quantities and also employ a small labour force.

(C) These are highly polluting industries and major contributor of GHGs.

(D) These industries can be located in a wide variety of places which has the transportation network by road.

6. Consider the following functions is/ are performed by Central Drugs Standard Control Organization (CDSCO) of India ?

1. Regulating import of Drugs
2. Approval of new drugs
3. Approval of clinical trials

Select the correct answer using the code given below :

(A) 1 only

(B) 2 and 3 only

(C) 1 and 3 only

(D) 1, 2 and 3

7. Which of the following are the breeding grounds for temperate cyclone ?

1. South-east Caribbean region
2. Mexican Gulf
3. Mediterranean basin extending up to Russia
4. North-west Australia

Codes:

(A) 1, 2 and 3

(B) 2 and 3

(C) 3 and 4

(D) 1, 3 and 4

8. Which of the following statement related to IPCC is incorrect ?

(A) The IPCC reviews and assesses the scientific, technical and socio-economic information relevant to the understanding of climate change.

(B) It conducts research and monitor climate related data or parameters.

(C) It was established by the UNEP and WMO.

(D) IPCC assessments provide a scientific basis for governments at all levels to develop climate related policies.

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9. Which of the following publishes International Debt Statistics ?

(A) IMF

(B) World Bank

(C) United Nations

(D) World Economic Forum

10. Wheat Rust, recently in news, is :

(A) a fungal disease which turns leaves yellowish and stops the photosynthesis.

(B) a newly discovered genetic variant of wheat.

(C) a weed that reduces the yield of wheat crop.

(D) None of the above.

11. With reference to the National Clean Environment (Energy) Fund, consider the following statements :

1. It utilizes funds received from levying of Clean Environment Cess.
2. Its proceeds are being used to finance projects under Namami Gange.
3. It has been created under the Ministry of Environment, Forest and Climate Change.

Which of the statements given above are correct ?

(A) 1 and 2 only

(B) 1 and 3 only

(C) 2 and 3 only

(D) 1, 2 and 3 only

12. What is the sum of the 11 terms of an Arithmetic Progresion whose 3rd term is 10 and the term is 20 ?

(A) 135

(B) 165

(C) 330

(D) None of these

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13. A rectangular pool of 20 m wide and 60 m long is surrounded by a walkway of uniform width. If the total area of the walkway is 516 m2, how wide, in metres, is the walkway ?

(A) 43 m

(B) 3 m

(C) 2.5 m

(D) 3.5 m

14. Who is the author of book 'Gora' ?

(A) Samaresh Basu

(B) Rabindranath Tagore

(C) John Keats

(D) Sarat Chandra Chattopadhyay

15. Which of the following bills can be introduced in the Rajya Sabha ?

1. Constitutional Amendment bill
2. Money bill
3. Bill for creation of a new State

Which of the statements given above is / are correct ?

(A) 1 and 2 only

(B) 1 and 3 only

(C) 3 only

(D) 1, 2 and 3

16. Recently, which board opened its License & Excise division in Agartala ?

(A) Brick Board

(B) Rubber Board

(C) Textile Board

(D) Sugar Board

17. The Tripura Forest Development & Plantation Corporation Ltd. has become the first corporation of north-east region and second in the country to receive the International Forest Management Certification from Bonn Forest Stewardship Council. Where is Bonn based ?

(A) France

(B) Holland

(C) Germany

(D) England

18. As per the Union Budget 2017-18, in which of the following two cities 'oil reserves' have been announced to be built ?

(A) Mangalore and Vishakhapatnam

(B) Padur and Dahej

(C) Chandikhole and Bikaner

(D) Barmer and Titipaka

19. With reference to Maternity Benefits (Amendment) Act, 2016 consider the following statements :

1. It enhances the maternity benefit to working women from 12 weeks to 26 weeks.
2. It is applicable to women working both in organised and unorganised sectors.
3. Adopting mothers have not been covered under the Act. Which of the statements given above is/are correct ?

(A) 1 and 2 only

(B) 1 only

(C) 2 and 3 only

(D) 1, 2 and 3

20. Which of the following statements regarding 'Open Sky' Agreement are correct ?

1. The agreement allows unlimited flights between the two signing countries.

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2. India has signed 'Open sky agreement' with all SAARC countries, except Pakistan.

Select the correct answer using the code given below :

(A) 1 only

(B) 2 only

(C) Both 1 and 2

(D) Neither 1 nor 2

21. Minimum number of queues needed to implement the priority queue ?

(A) One

(B) Two

(C) Three

(D) Four

22. Sorting is not possible by using which of the following methods ?

(A) Insertion

(B) Selection

(C) Exchange

(D) Deletion

23. Delegation of Financial Power Rules, Tripura, 2011 has been issued by the Government in the

(A) Revenue Department

(B) GA(P & T) Department

(C) GA(SA) Department

(D) None of these

24. To prevent a DC return between source and load, it is necessary to use

(A) resistor between source and load

(B) inductor between source and load

(C) capacitor between source and load

(D) Either (A) or (B)

25. System testing is a

(A) Black box testing

(B) White box testing

(C) Grey box testing

(D) Both A and B

26. Which of the following special symbol allowed in a variable name ?

(A) * (asterisk)

(B) | (pipeline)

(C) – (hyphen)

(D) _ (underscore)

27. Which one of the following is not a Data Definition Language (DDL) statements ?

(A) TRUNCATE

(B) ALTER

(C) DROP

(D) UPDATE

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28. An Enterprise Resource Planning application is an example of a (n)_____.

(A) single-user database application

(B) multi-user database application

(C) e-commerce database application

(D) data mining database application

29. What type of join is needed when you wish to include rows that do not have matching values ?

(A) Equi-join

(B) Natural join

(C) Outer join

(D) All of the above

30. Which of the following is NOT a namespace in the .NET Framework Class Library ?

(A) System.Process

(B) System.Security

(C) System.Threading

(D) System.Drawing

31. Which of the following can be facilitated by the Inheritance mechanism ?

1. Use the existing functionality of base class.
2. Override the existing functionality of base class.
3. Implement new functionality in the derived class.
4. Implement polymorphic behaviour.
5. Implement containership.

(A) 1, 2, 3

(B) 3, 4

(C) 2, 4, 5

(D) 3, 5

32. Which of the following is NOT a .NET Exception class ?

(A) Exception

(B) Stack Memory Exception

(C) Divide By Zero Exception

(D) Out Of Memory Exception

33. Which two are valid constructors for Thread ?

1. Thread (Runnable r, String name)
2. Thread ( )
3. Thread (int priority)
4. Thread (Runnable r, Thread Group g)
5. Thread (Runnable r, int priority)

(A) 1 and 3

(B) 2 and 4

(C) 1 and 2

(D) 2 and 5

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34. Which of the following can be declared in an interface ?

1. Properties
2. Methods
3. Enumerations
4. Events
5. Structures

(A) 1, 3

(B) 1, 2, 4

(C) 3, 5

(D) 4, 5

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35. District Treasury is under the charge of

(A) District Treasury Officer

(B) Senior Deputy Magistrate

(C) DM & Collector

(D) None of them

36. Charged expenditure in Tripura means expenditure charged on

(A) the consolidated fund of India

(B) the budget allocation of a Department.

(C) the allotted fund of a project

(D) None of these

37. Except for powers delegated, for drawal of AC Bill prior concurrence shall be required of the following department :

(A) Rd Deaprtment

(B) GA(P & T) Department

(C) Finance Department

(D) None of these

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38. "Head of Department" of the State Government is notified by orders issued by the

(A) GA(P & T) Department

(B) Revenue Department

(C) Political Department

(D) Finance Department

39. The drawal of money from Treasuries/ Sub-Treasuries by DDOs shall be restricted to

(A) Letter of Credit(LoC)

(B) Monthly/Quarterly expenditure ceiling

(C) Fund allocation order issued by the Controlling Officer

(D) All of these.

40. A forward voltage of 9 V is applied to a diode in series with a 1 kΩ load resistor. The voltage across load resistor is zero. It indicates that

(A) diode is short circuited

(B) diode is open circuited

(C) resistor is open circuited

(D) diode is either short circuited or open circuited

PART – II

41. Angle between the lines with slopes 3/4 and 1/7 is

(A) 60°

(B) 45°

(C) 30°

(D) None of these

42. In the indirect address mode

(A) the effective address is equal to the address part of the instruction

(B) the content of the program counter is added to address part of the instruction

(C) a memory is addressed by a register

(D) address in the instruction points to location of the effective address

43. In a J-K Flip Flop the function K=J is used to realize a

(A) T-Flip-Flop

(B) RS flip-flop

(C) D flip-flop

(D) Master Slave flip-flop

44. Which of the following is the internal memory of the computer ?

(A) CPU registers

(B) Main memory

(C) Cache

(D) All of these

45. Fetch operations are not required in

(A) direct addressing

(B) indirect addressing

(C) immediate addressing

(D) register addressing

46. An instruction to provide small delay in program

(A) LDA

(B) NOP

(C) BEA

(D) None of these

47. For a _____ channel, the Nyquist bit rate formula defines the theoretical maximum bit rate.

(A) low-pass

(B) band-pass

(C) noisy

(D) noiseless

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48. DMA module can communicate with CPU through

(A) Interrupt

(B) Cycle stealing

(C) Branch instruction

(D) None of these

49. What is the output of this C code ?

```
#include <stdio.h>
int main ()
{
    int x = – 2;
    x = x >> 1;
    printf ("%d\n", x) ;
}
```

(A) 1

(B) –1

(C) 2 ^ 31 – 1 considering int to be 4 bytes

(D) Either B or C

50. How many keystrokes are needed to type numbers from 1 to 1000 ?

(A) 2704

(B) 2890

(C) 2893

(D) 3001

51. When in-order traversing a tree resulted EACKFHDBG the pre-order traversal would return

(A) F A E K C D B H G

(B) F A E K C D H G B

(C) E A F K H D C B G

(D) F E A K D C H B G

52. Which one of the following correctly determines the solution of the recurrence $T(n) = 2T(n/2) + \log n$ with $T(1) = 1$?

(A) $\Theta(n)$

(B) $\Theta(n \log n)$

(C) $\Theta(n^2)$

(D) $\Theta(\log n)$

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53. Virtual memory of a computer system may be

(A) of unlimited size.

(B) as big as maximum addressing capability of the computer system.

(C) of size equivalent to total capacity of secondary storage plus size of RAM.

(D) None of the above

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54. In an AM wave, the majority of the power is in _____ .

(A) Lower sideband

(B) Upper sideband

(C) Carrier

(D) None of the above

55. Cache memory is implemented using

(A) Dynamic RAM

(B) Static RAM

(C) PROM

(D) EPROM

56. _____is the time required to move the disk arm to the required track.

(A) Seek time

(B) Rotational delay

(C) Latency time

(D) Access time

57. A signal is measured at two different points. The power is P1 at the first point and P2 at the second point. The dB is 0. This means _____.

(A) P2 equals P1

(B) P2 is zero

(C) P2 is much larger than P1

(D) P2 is much smaller than P1

58. What is the use of a Bridge in a computer network ?

(A) To connect LANs

(B) To separate LANs

(C) To connect LANs to WAN

(D) To route the data

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59. What is a stub network ?

(A) A network with more than one exit point.

(B) A network with more than one exit and entry point.

(C) A network with only one entry and no exit point.

(D) A network that has only one entry and exit point.

60. Interrupts which are initiated by an I/O drive are

(A) internal

(B) external

(C) software

(D) All of the above

61. A direct method of deadlock prevention is to prevent the occurrences of _____.

(A) Mutual exclusion

(B) Hold and wait

(C) Circular waits

(D) No preemption

62. At 100% modulation, the power in each sideband is _____ of that of carrier.

(A) 50%

(B) 40%

(C) 60%

(D) 25%

63. A thread is a _____.

(A) task

(B) process

(C) program

(D) light weight process

64. Which protocol does Ping use ?

(A) TCP

(B) ARP

(C) ICMP

(D) BootP

65. An attribute in a relation is a foreign key if the ____ key from one relation is used as an attribute in that relation.

(A) Candidate

(B) Primary

(C) Super

(D) Sub

66. A _____ is a special kind of a stored procedure that executes in response to certain action on the table like insertion, deletion or updating data.

(A) Procedure

(B) Trigger

(C) Function

(D) None of the mentioned

67. The major advantage of FM over AM is _____.

(A) Reception is less noisy

(B) Higher carrier frequency

(C) Smaller bandwidth

(D) Small frequency deviation

68. Which of the following cannot be used inside *sizeof* ?

(A) Pointers

(B) Functions

(C) Macro definition

(D) None of the mentioned

69. For each attribute of a relation, there is a set of permitted values, called the _____ of that attribute.

(A) Domain

(B) Relation

(C) Set

(D) Schema

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70. For analyzing an algorithm, which is the best computing time out of the following ?

(A) O (100 log n)

(B) O (n)

(C) O (n log n)

(D) O (n^2)

71. A file produced by a spreadsheet

(A) can be used as it is by the DBMS

(B) is generally stored on disk in an ASCII text format

(C) Both A and B above

(D) None of the above

72. In SQL, values of one type can be converted to another domain using which of the following ?

(A) Cast

(B) Drop type

(C) Alter type

(D) Convert

73. FPGA means

(A) Forward Programmable Gate Array

(B) Forward Parallel Gate Array

(C) Field Programmable Gate Array

(D) Field Parallel Gate Array

74. Which is the most important feature of spiral model ?

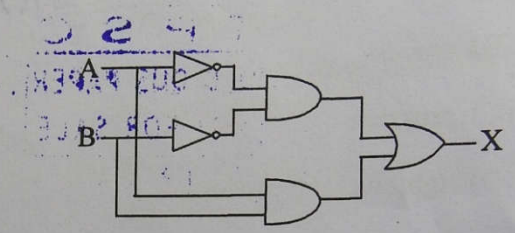
(A) Quality management

(B) Risk management

(C) Performance management

(D) Efficiency management

75. What type of logic circuit is represented by the figure shown below ?



(A) XOR

(B) XAND

(C) XNOR

(D) XNAND

76. Which one of the following is not a vectored interrupt ?

(A) TRAP

(B) INTR

(C) RST 3

(D) RST 7.5

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77. In a circuit, superposition theorem is not applicable for

(A) current calculations

(B) voltage calculations

(C) power calculations

(D) None of the above

78. In an SR latch built from NOR gates, which condition is not permitted ?

(A) S=0, R=0

(B) S=0, R=1

(C) S=1, R=0

(D) S=1, R=1

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79. The simplest equation which implements the K-map shown below is :

	$\overline{C}$	C
$\overline{A}\,\overline{B}$	0	0
$\overline{A}B$	1	1
AB	1	1
$A\overline{B}$	0	1

(A) $X = AC + B$

(B) $X = A\overline{B}$

(C) $AB\overline{C} + ABC + A\overline{B}C$

(D) $AB + \overline{A}B$

80. From the following which quality deals with maintaining the quality of the software product ?

(A) Quality assurance

(B) Quality control

(C) Quality efficiency

(D) None of the above

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81. The smallest number of colors needed to color the vertices of a graph G is called its _____.

(A) Coloring number

(B) Chromatic number

(C) Coloring index

(D) Isoperimetric number

82. Out of the following options which is the most efficient representation of a priority queue ?

(A) Sorted array

(B) Unsorted array

(C) Heap

(D) Sorted linked list

83. Alpha and Beta Testing are forms of _____.

(A) Acceptance Testing

(B) Integration Testing

(C) System Testing

(D) Unit Testing

84. Paging _____.

(A) solves the memory fragmentation problem

(B) allows modular programming

(C) allows structured programming

(D) avoids deadlock

85. Parallel processing may occur

(A) in the instruction stream

(B) in the data stream

(C) Both A and B

(D) None of the above

86. A COCOMO model is

(A) Common Cost Estimation Model

(B) Constructive Cost Estimation Model

(C) Complete Cost Estimation Model

(D) Comprehensive Cost Estimation Model

87. In the memory hierarchy, the fastest memory is

(A) SRAM

(B) Cache

(C) Registers

(D) DRAM

88. Problems are called deterministic if

(A) poly-time algorithms have been found for them

(B) they always compute the correct answer

(C) they have polynomial upper and lower bounds

(D) All of the above

89. The Traveling Salesman Problem can be represented as a

(A) Depth first tree of a graph

(B) Hamiltonian Circuit of a graph

(C) Eulerian cycle of a graph

(D) Bipartite graph

90. With linear search algorithm if p_i is the probability that search $key = x_i$, the ith element of the n-element array being searched, then the expected number of probes is

(A) $1p_1 + 2p_2 + 3p_3 + \ldots + n\ p_n$

(B) $np_1 + (n-1)p_2 + (n-3)p_3 + \ldots + 1p_n$

(C) $n-1$

(D) None of the above

91. If the radix point (binary point) is fixed and assumed to be to on the right of the right most digit, the representation of such number is called

(A) Fixed point

(B) Floating point

(C) Radix point

(D) None of these

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92. Virtual memory of a computer system may be

(A) of unlimited size.

(B) as big as maximum addressing capability of the computer system.

(C) of size equivalent to total capacity of secondary storage plus size of RAM.

(D) None of the above

93. In a C program, which of the following can never be sent by call-by-value ?

(A) Variable

(B) Array

(C) Structures

(D) Both B and C

94. Which data communication method is used to transmit the data over a serial communication link ?

(A) Simplex

(B) Half-duplex

(C) Full duplex

(D) All of the above

95. Loss in signal power as light travels down the fiber is called

(A) Attenuation

(B) Propagation

(C) Scattering

(D) Interruption

96. In OOP, encapsulation helps in

(A) information hiding

(B) providing low coupling

(C) providing high cohesion

(D) All of the above

97. In compiler design parsing is also known as

(A) Lexical analysis

(B) Syntax analysis

(C) Semantic analysis

(D) Code generation

98. In a two pass assembler the object code generation is done during the

(A) second pass

(B) first pass

(C) zeroeth pass

(D) Not done by assembler

99. Producer-consumer problem can be solved using _____.

(A) semaphores

(B) event counters

(C) monitors

(D) All of the above

100. The topology with highest reliability is _____.

(A) Bus Topology

(B) Star Topology

(C) Ring Topology

(D) Mesh Topology

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